Name_____

Chapter 4 Pt 1 Study Guide CP Living

What were the two things wrong with Rutherford's model of the atom?

Describe Neils Bohr's hydrogen atom in detail.

How do electrons behave when energy is added to the atom? How can the light that is given off be used to identify an element? For example, think of the flame test lab.

Define excited state and ground state.

Why was Bohr's model wrong?

What are Schodinger and Heisenberg's contributions to the quantum model?

In the quantum model, what is an orbital? What kind of orbitals have we worked with? How many electrons do they hold and what are their shapes?

What are the principle and angular momentum quantum numbers?

Define Aufbau principle.

In the quantum model, can we precisely know the exact location of an electron?

What are the electrons in the outermost energy level called? _____

Which orbitals are these electrons found in? _____

What is the maximum number of these electrons an element can have? _____

Give the **electron configuration, noble gas notations, and electron dot notations** for the following elements/ions:

| | $e^-$ configuration | noble gas notation | $e^-$ dot |
|---|---|---|---|
| Be | | | |
| O | | | |
| Zn | | | |
| $Ca^{2+}$ | | | |
| $O^{2-}$ | | | |

Which elements have the following electron configurations?

$1s^2 2s^1$ _____

$1s^2 2s^2 2p^4$ _____

[He] $2s^2$ _____

$1s^2 2s^2 2p^6 3s^2 3p^5$ _____

$1s^2 2s^2 2p^6 3s^2 3p^6 3d^6 4s^2$ _____

[Kr] $4d^{10} 5s^2 5p^3$ _____